

**UNPUBLISHED PRELIMINARY DATA**

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CATALOG OF LUNAR CRATERS IV

by

(NASA CR-55536) 12 Dec. 1963  
CODE-1  
OTS  
Res. Rept.

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21 p rfs

Introduction

This catalog gives the selenographic coordinates of all craters observable on a selected portion of the moon's surface. The diameter of the crater together with comments on shape are also given. Approximately 25 per cent of the craters have been measured previously by other observers. The catalog gives the position found in the present series of measurements and the name adopted by the International Astronomical Union.

Boundaries of Section

The section cataloged here is a strip on sheet D4-a of the "Photographic Lunar Atlas" (Kuiper, 1960). The boundaries of the strip are

North boundary:  $\delta = .2500$

South boundary: top edge of photograph

East boundary:  $\lambda = 0$

West boundary: right hand edge of photograph.

The photograph is oriented with south at top, and east-west directions follow the revised I.A.U. usage, according to which Mare Crisium is near the eastern limb of the moon.

OTS PRICE

260 ph.  
0.83 mf.

XEROX

MICROFILM

Selection criteria

(1.) A crater must have at least half of its wall clearly visible.

(2.) When foreshortening has been allowed for, a crater must be approximately circular. If elliptical, its eccentricity must not be greater than 0.90, i.e. the ratio of major to minor axes must not exceed 3.0. A crater may be polygonal, but its longest diameter must not exceed 1.5 times its shortest diameter.

(3.) A distinct shadow must be visible on some photograph of the crater, and the shadow must be properly oriented with respect to the sun.

The only types of craters which are likely to be missing in significant numbers are (a) those which are very small (less than 3 km in diameter) and (b) those which are very shallow and far from the terminator.

The photograph of the area to be surveyed was oriented with south at the top. For convenience, an x and y axes were chosen parallel to the edges of the photograph, the origin was set at the lower left corner, and the x-y coordinate grid established in inches. The method used to calculate the plate constants is that described by Belsky (1962). Crater coordinates were used as inputs to the Belsky program, with values of  $\xi$ ,  $\eta$  obtained from D. W. G. Arthur (1962). This procedure avoids the errors contained in the coordinate grid of the Arthur and Whitaker (1960) atlas. (See Friesen

(1963) ).

In the catalog the first two lines (01, 02) on the first page, under "Calculation of Plate Constants", give the constants  $A_1$  to  $F_1$  in the equation

$$\xi = A_1 x^2 + B_1 xy + C_1 y^2 + D_1 x + E_1 y + F_1 \quad (3)$$

The second two lines (03, 04) give the constants in the equation

$$\eta = A_2 x^2 + B_2 xy + C_2 y^2 + D_2 x + E_2 y + F_2 \quad (4)$$

The constants are given in Fortran floating point format. For example,  $A = -.11039169E - 04$  should be interpreted as

$$A = -0.11039169 \times 10^{-4}.$$

Line 05 on the first page gives the scale factor  $F$ , which was calculated in the following manner. Several pairs of craters, whose coordinates ( $\xi$ ,  $\eta$ ,  $x$ ,  $y$ ) are known, were chosen such that for each pair the line joining the craters is very nearly parallel to the limb of the moon. The distance between the craters on the photograph, in inches, was measured either directly or by using the equation:

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} \quad (5)$$

The same distance was measured in units of the Moon's

radius as follows:

$$D = \sqrt{(\xi_1 - \xi_2)^2 + (\eta_1 - \eta_2)^2 + (\zeta_1 - \zeta_2)^2} \quad (6)$$

where  $\zeta = \sqrt{1 - \xi^2 - \eta^2}$ . For two craters on a line nearly parallel to the limb  $(\zeta_1 - \zeta_2)^2$  is negligible. Then the scale factor  $F$  is given, in kilometers per inch on the photograph, by:

$$F = \frac{R D}{d} \quad (7)$$

where  $R$  is the lunar radius in km. Values for  $F$  are computed for as many pairs of craters as can conveniently be chosen; the average value thus obtained, with its estimated error, is quoted in line 05.

#### Residuals and errors

The residuals from the determination of plate constants gave an rms. value less than  $\pm 0.0003$  for  $\xi$  and  $\eta$ , corresponding to an uncertainty in position on the surface of  $\pm 0.5$  km. Although undetected systematic errors almost certainly exist, the positions given are probably reliable to  $\pm 1.0$  km. The error in determining the diameter of the craters depends to a great extent on the individual crater. The error is estimated as  $\pm 30$  per cent for small craters, decreasing to  $\pm 10$  per cent for the largest crater.

The catalog gives the position of the geometrical center of the rim. If the rim is raised above the mean level of the moon then the measured center is displaced towards the limb of the moon. This displacement is in general less than 1 km and is negligible compared to the uncertainty of defining the rim for a large crater.

The remainder of the pages under the heading "Calculation of Plate Constants" give the coordinates of the craters used for the calculation (Belsky 1962).

Explanation of Columns in the Catalog

The first column (CRATER) gives the designation of craters. Named craters follow the IAU system (Blagg and Müller 1932).

Columns 2 and 3 (XSI and ETA) give the computed orthographic coordinates of each crater. These values are reliable to three places of decimal.

Columns 4 and 5 (X and Y) give the coordinates of each crater, in inches, as measured on the photograph.

Column 6 (DIAM) gives the diameter of each crater in kilometers. The diameter of each crater was measured in inches on the photograph, and the scale factor described above was used to convert to kilometers. Diameters are peak-to-peak and parallel to the limb, except for elliptical craters for which the foreshortening was removed and the longest diameter taken. The smallest craters included in the

catalog are approximately one kilometer in diameter, corresponding to 0.03 inches on the photographs.

Column 7 (Q) provides an index to how well each crater fulfills our criteria for crater selection. A crater of quality "C" barely meets the minimum requirements for inclusion in the catalog. It may have just half of its wall visible, or be very elliptical, or show a shadow on only one photograph, or be so small as to be barely visible. Craters of quality "B" may have a small part of the wall missing or be somewhat elliptical or polygonal. Craters of quality "A" show distinct, properly oriented shadows on at least two photographs taken under opposing illuminations, have complete or nearly complete walls, and are not strongly elliptical or polygonal.

Column 8 (P) denotes how perfect a polygon each crater is. Craters for which there is no entry in this column are circular or nearly so. "A" craters are well-defined, quite regular, complete polygons. A "B" crater is less regular than the "A" polygons, may have sides of drastically unequal length, or may have one or more sides missing. A "C" crater is not a well-defined polygon; it may be a circular crater with irregular walls, or if it is a true polygon the number of its sides cannot be ascertained. In this column, the letter (A, B, or C) is followed by a digit giving the number of sides in the polygon. For example, "A6" denotes a well-defined, hexagonal crater. A "B4" crater may be a square

with one side missing, or a trapezoidal formation, etc.

Column 9 (RMKS) contains a series of numbered asterisks referring the reader to additional remarks or information given on a separate page at the end of the catalog.

Column 10 (REG) gives the number of the photograph on which each crater was measured.

References

- Belsky, L., 1962. The Transformation between Cartesian and Conic Coordinates. Lunar Project, Report 1, August 1962, Boston University, NASA G246-62.
- Blagg, Mary A., and Müller, K., 1932. Named Lunar Craters, Commission 17, International Astronomical Union, Percy Lund and Humphries, London.
- Kuiper, G. P., 1960. Photographic Lunar Atlas, Univ. Chicago Press.
- Arthur, D. W. G., and E. A. Whitaker, 1960. Orthographic Atlas of the Moon (ed. by G. P. Kuiper), University of Arizona Press.
- Friesen, D. D., 1963. The Choice of Fiducial Points in Determining Plate Constants for Lunar Photographs. Lunar Project, Report 9, November 1963, Boston University, NASA G246-62.
- Arthur, D. W. G. (1962). Consolidated Catalog of Selenographic Positions. Comm. of the Lunar and Planetary Laboratory V.1, No. 11, University of Arizona.

BOSTON UNIVERSITY SURVEY OF LUNAR CRATERS

AREA - D4A

A=-.81483676E-05	B=-.38399397E-06	C=-.14122762E-04	01
D=-.19560504E-01	F= .20770969E-03	F= .34865458E-01	02
A=-.70180183E-05	B= .23560999E-05	C=-.12668671E-04	03
D= .59006629E-04	E=-.19717994E-01	F= .28403773E 00	04
F = 34.98 +- .07			5

X	Y	XSI	XSI(C)	DELTA	ETA	ETA(C)	DELTA
16.7900	13.3500	-00.2955	-00.2956	00.0001	00.0183	00.0180	00.0002
18.0500	13.4000	-00.3208	-00.3207	-00.0000	00.0168	00.0168	-00.0000
12.3600	12.5900	-00.2081	-00.2078	-00.0002	00.0339	00.0338	00.0000
11.9600	12.4100	-00.2002	-00.1998	-00.0003	00.0376	00.0374	00.0001
08.3500	12.7500	-00.1284	-00.1287	00.0003	00.0307	00.0308	-00.0001
07.8200	12.2300	-00.1182	-00.1182	00.0000	00.0413	00.0412	00.0000
08.7900	11.5900	-00.1371	-00.1372	00.0001	00.0539	00.0540	-00.0001
09.4100	11.5400	-00.1492	-00.1494	00.0002	00.0549	00.0549	-00.0000
10.1000	11.5400	-00.1632	-00.1630	-00.0001	00.0551	00.0549	00.0001
10.1800	10.3800	-00.1645	-00.1645	00.0000	00.0784	00.0781	00.0002
08.6700	10.0900	-00.1348	-00.1347	-00.0000	00.0838	00.0839	-00.0001
11.1300	11.4800	-00.1836	-00.1833	-00.0002	00.0558	00.0560	-00.0002
12.1700	11.3900	-00.2040	-00.2039	-00.0000	00.0580	00.0578	00.0001
15.1300	11.4200	-00.2624	-00.2624	00.0000	00.0568	00.0568	-00.0000
17.1800	11.3200	-00.3031	-00.3031	00.0000	00.0586	00.0586	-00.0000
04.1200	12.2200	-00.0454	-00.0454	00.0000	00.0415	00.0414	00.0000
04.1300	10.6300	-00.0454	-00.0454	00.0000	00.0732	00.0732	-00.0000
02.7800	10.3800	-00.0190	-00.0189	-00.0000	00.0783	00.0781	00.0001
03.8700	09.0800	-00.0402	-00.0402	00.0000	00.1040	00.1041	-00.0001
01.3700	08.1600	00.0088	00.0088	-00.0000	00.1223	00.1223	-00.0000
18.0900	09.6800	-00.3209	-00.3210	00.0001	00.0910	00.0911	-00.0001
18.4700	09.1800	-00.3284	-00.3285	00.0001	00.1010	00.1010	-00.0000
19.6300	09.5300	-00.3516	-00.3516	00.0000	00.0935	00.0938	-00.0003
19.1800	09.0200	-00.3423	-00.3426	00.0003	00.1044	00.1041	00.0002
17.7500	09.0000	-00.3145	-00.3142	-00.0002	00.1047	00.1047	-00.0000
17.5800	08.2400	-00.3111	-00.3108	-00.0002	00.1200	00.1199	00.0000
15.1900	08.0600	-00.2635	-00.2634	-00.0000	00.1240	00.1238	00.0001
04.9400	08.7600	-00.0613	-00.0612	-00.0000	00.1103	00.1105	-00.0002
04.5100	06.6800	-00.0529	-00.0527	-00.0001	00.1520	00.1519	00.0000
02.8400	06.4500	-00.0199	-00.0200	00.0001	00.1565	00.1564	00.0000
03.8100	06.1800	-00.0390	-00.0390	00.0000	00.1617	00.1618	-00.0001
01.4500	06.4800	00.0073	00.0072	00.0000	00.1559	00.1558	00.0000
00.6100	06.7000	00.0235	00.0236	-00.0001	00.1517	00.1514	00.0002
13.0100	05.4400	-00.2202	-00.2203	00.0001	00.1760	00.1761	-00.0001
12.9500	05.8000	-00.2192	-00.2191	-00.0000	00.1688	00.1690	-00.0002
13.6100	05.8700	-00.2320	-00.2321	00.0001	00.1676	00.1675	00.0000
14.5800	05.1900	-00.2512	-00.2513	00.0001	00.1812	00.1809	00.0002
15.0000	05.3100	-00.2597	-00.2597	00.0000	00.1785	00.1784	00.0000
13.8000	04.1700	-00.2360	-00.2360	00.0000	00.2012	00.2012	-00.0000

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X	Y	XSI	XSI(C)	DELTA	ETA	ETA(C)	DELTA
14.4900	04.5000	-00.2496	-00.2496	00.0000	00.1948	00.1945	00.0002
04.7800	03.4900	-00.0581	-00.0582	00.0001	00.2152	00.2152	-00.0000
05.9200	03.6700	-00.0808	-00.0806	-00.0001	00.2117	00.2116	00.0000
07.4500	03.6800	-00.1107	-00.1107	00.0000	00.2115	00.2114	00.0000
18.9500	02.7800	-00.3385	-00.3382	-00.0002	00.2278	00.2278	-00.0000
18.3000	02.0700	-00.3257	-00.3254	-00.0002	00.2420	00.2419	00.0000
17.7000	02.2200	-00.3136	-00.3135	-00.0000	00.2393	00.2391	00.0001
06.1000	02.1200	-00.0843	-00.0843	00.0000	00.2423	00.2423	-00.0000
03.4700	01.3700	-00.0328	-00.0328	00.0000	00.2570	00.2571	-00.0001
05.0100	01.3500	-00.0633	-00.0630	-00.0002	00.2576	00.2575	00.0000
15.1100	02.9400	-00.2626	-00.2620	-00.0005	00.2254	00.2253	00.0000
16.2500	02.5400	-00.2849	-00.2847	-00.0001	00.2329	00.2330	-00.0001
15.7800	01.4900	-00.2749	-00.2755	00.0006	00.2537	00.2538	-00.0001
16.6800	03.7100	-00.2928	-00.2931	00.0003	00.2099	00.2098	00.0000
XSI RMS.=		.19452372E-03		ETA RMS.=		.15356508E-03	

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG	
ERATOSTHENES	-•1894	•2496	11.43	01.73	059.8	A	C	*5	D4A	
	-•2901	•2492	16.52	01.72	003.5	B			D4A	
	-•2814	•2481	16.08	01.78	003.8	C		*7	D4A	
	-•2747	•2479	15.74	01.79	003.1	C			D4A	
	-•2475	•2457	14.37	01.91	003.1	C			D4A	
	-•2362	•2456	13.80	01.92	002.4	C			D4A	
	-•0979	•2436	06.79	02.05	002.4	B			D4A	
	-•2740	•2434	15.71	02.02	004.9	C			D4A	
	MARCO POLO C	-•0843	•2423	06.10	02.12	007.0	A			D4A
GAY LUSSAC F	-•2275	•2421	13.36	02.10	004.5	C			D4A	
	-•3254	•2419	18.30	02.07	006.3	A			D4A	
	-•3512	•2411	19.60	02.10	003.1	C		*3	D4A	
GAY LUSSAC	-•2740	•2408	15.71	02.15	004.2	C			D4A	
	-•3419	•2402	19.13	02.15	003.8	C			D4A	
	-•3435	•2398	19.21	02.17	027.3	B	B4		D4A	
GAY LUSSAC G	-•2669	•2395	15.35	02.22	005.2	C			D4A	
	-•3135	•2391	17.70	02.22	005.6	C			D4A	
	-•1164	•2390	07.73	02.28	002.4	B			D4A	
	-•2261	•2384	13.29	02.29	004.2	C			D4A	
STADIUS J	-•2623	•2381	15.12	02.29	003.5	C			D4A	
	-•2689	•2381	15.45	02.29	003.8	C			D4A	
	-•0171	•2357	02.68	02.45	003.5	C			D4A	
	-•2478	•2345	14.39	02.48	003.8	B		*7	D4A	
	-•2954	•2345	16.79	02.46	003.5	C			D4A	
	-•0532	•2340	04.52	02.54	003.1	C			D4A	
	-•2936	•2337	16.70	02.50	003.8	C			D4A	
COPERNICUS L	-•2595	•2334	14.98	02.53	003.8	C			D4A	
	-•2847	•2330	16.25	02.54	003.5	C			D4A	
	-•2585	•2311	14.93	02.65	004.2	C			D4A	
	-•0982	•2304	06.81	02.72	002.1	C			D4A	
	-•2059	•2304	12.27	02.70	004.2	B			D4A	
	-•2549	•2301	14.75	02.70	003.8	C			D4A	
	-•0837	•2288	06.07	02.80	002.8	C			D4A	
GAY LUSSAC A	-•3382	•2278	18.95	02.78	016.4	B	C	*3	D4A	
	-•2027	•2277	12.11	02.84	003.5	B			D4A	
	-•2638	•2275	15.20	02.83	006.3	B			D4A	
	STADIUS F	-•2620	•2253	15.11	02.94	005.9	C			D4A
-•1669		•2252	10.30	02.97	004.5	B			D4A	
-•2486		•2248	14.43	02.97	002.8	C			D4A	
-•2608		•2229	15.05	03.06	005.6	B	B4		D4A	
ERATOSTHENES K	-•1563	•2221	09.76	03.13	005.6	A			D4A	
	-•2466	•2221	14.33	03.11	003.1	C			D4A	
	-•2800	•2212	16.02	03.14	004.2	C			D4A	
	-•0012	•2205	01.87	03.22	002.8	C			D4A	
	-•2505	•2202	14.53	03.20	003.1	C			D4A	
	-•2705	•2187	15.54	03.27	002.8	C			D4A	
	STADIUS E	-•2620	•2178	15.11	03.32	005.2	C			D4A
		-•2697	•2177	15.50	03.32	002.8	C			D4A
		-•1914	•2172	11.54	03.37	002.8	C			D4A
-•2493		•2169	14.47	03.37	003.1	C			D4A	

CRATER	XST	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
BODE E	-•2796	•2161	16.00	03.40	002.8	C			D4A
	-•0582	•2152	04.78	03.49	007.3	A			D4A
	-•2838	•2151	16.21	03.45	004.5	C		*3	D4A
	-•1182	•2147	07.83	03.51	002.4	C			D4A
	-•1572	•2144	09.81	03.52	003.1	C			D4A
	-•2697	•2142	15.50	03.50	003.1	C			D4A
	-•1343	•2129	08.65	03.60	002.1	C			D4A
	-•2596	•2125	14.99	03.59	003.8	C			D4A
BODE C	-•2560	•2119	14.81	03.62	006.3	B			D4A
	-•2635	•2118	15.19	03.62	004.5	C		*3	D4A
	-•0806	•2116	05.92	03.67	007.7	A			D4A
	-•2685	•2116	15.44	03.63	004.2	C		*3	D4A
	-•1107	•2114	07.45	03.68	004.9	A			D4A
	-•0452	•2112	04.12	03.69	004.2	B			D4A
	-•2469	•2110	14.35	03.67	004.2	C		*3	D4A
	-•0141	•2108	02.53	03.71	003.8	B			D4A
BODE H	-•1158	•2104	07.71	03.73	002.8	C			D4A
	-•2362	•2099	13.81	03.73	004.2	C		*3	D4A
	-•2931	•2098	16.68	03.71	005.9	C			D4A
	-•2340	•2085	13.70	03.80	004.9	C			D4A
	-•2677	•2085	15.40	03.79	004.2	C			D4A
	-•2287	•2079	13.43	03.83	004.2	C			D4A
	-•2469	•2078	14.35	03.83	002.8	C			D4A
	-•2825	•2076	16.15	03.83	004.2	C			D4A
COPERNICUS K	-•1209	•2072	07.97	03.89	002.8	C			D4A
	-•2405	•2069	14.03	03.88	003.1	C			D4A
	-•2532	•2066	14.67	03.89	004.5	C			D4A
	-•2097	•2053	12.47	03.97	003.5	C			D4A
	-•2299	•2050	13.49	03.98	006.3	A			D4A
	-•2649	•2049	15.26	03.97	004.2	C			D4A
	-•1120	•2034	07.52	04.08	002.4	C			D4A
	-•1645	•2025	10.18	04.12	002.8	C			D4A
STADIUS B	-•2360	•2012	13.80	04.17	004.5	A			D4A
	-•1978	•2004	11.87	04.22	003.1	C			D4A
	-•2342	•2002	13.71	04.22	003.8	C			D4A
	-•2372	•1998	13.86	04.24	003.1	B		*3	D4A
	-•2496	•1989	14.49	04.28	003.1	B			D4A
	-•1577	•1978	09.84	04.36	002.8	C			D4A
	-•2712	•1977	15.58	04.33	004.2	B			D4A
	-•1112	•1973	07.48	04.39	002.8	C			D4A
STADIUS H	-•2470	•1973	14.36	04.36	003.1	C			D4A
	-•2251	•1965	13.25	04.41	003.5	B			D4A
	-•0252	•1957	03.10	04.47	003.1	C			D4A
	-•2268	•1953	13.34	04.47	003.1	C			D4A
	-•2813	•1947	16.09	04.48	003.5	A			D4A
	-•2496	•1945	14.49	04.50	006.3	B		*3	D4A
	-•2686	•1934	15.45	04.55	004.2	B			D4A
	-•1374	•1929	08.81	04.61	002.4	C			D4A
STADIUS G	-•1972	•1929	11.84	04.60	002.8	C			D4A
	-•2229	•1925	13.14	04.61	004.2	C			D4A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
COPERNICUS	-•2583	•1925	14.93	04.60	005.2	B			D4A
	-•2363	•1924	13.82	04.61	003.5	B			D4A
	-•1262	•1923	08.24	04.64	002.1	C			D4A
	-•0100	•1916	02.33	04.68	003.5	B			D4A
	-•1980	•1913	11.88	04.68	002.4	B			D4A
	-•0962	•1900	06.72	04.76	001.4	C			D4A
	-•0994	•1896	06.88	04.78	001.7	C			D4A
	-•1658	•1894	10.25	04.78	002.4	C		*3	D4A
	-•2227	•1884	13.13	04.82	003.1	C			D4A
	-•2619	•1881	15.11	04.82	003.5	C			D4A
	-•1683	•1876	10.38	04.87	003.1	C			D4A
	-•3372	•1873	18.91	04.83	093.4	A		*1,5	D4A
	-•2223	•1872	13.11	04.88	002.4	C			D4A
	-•2504	•1872	14.53	04.87	003.8	B			D4A
	-•2284	•1871	13.42	04.88	002.8	C			D4A
	-•1457	•1865	09.23	04.93	002.4	C			D4A
	-•1725	•1856	10.59	04.97	002.1	C			D4A
	-•2684	•1845	15.44	05.00	002.4	C			D4A
	-•2203	•1842	13.01	05.03	003.1	B			D4A
	-•2359	•1831	13.80	05.08	003.5	B		*3	D4A
	-•2729	•1827	15.67	05.09	004.9	C		*3	D4A
	-•2201	•1826	13.00	05.11	003.8	B			D4A
	-•2632	•1824	15.18	05.11	004.5	C		*3	D4A
	-•2432	•1821	14.17	05.13	002.8	B			D4A
STADIUS A	-•2513	•1809	14.58	05.19	005.6	B			D4A
STADIUS	-•2327	•1808	13.64	05.20	067.5	C		*1	D4A
STADIUS D	-•2296	•1790	13.48	05.29	003.8	B			D4A
STADIUS L	-•2597	•1784	15.00	05.31	004.5	B			D4A
	-•2822	•1781	16.14	05.32	003.8	B			D4A
	-•2104	•1779	12.51	05.35	002.8	C			D4A
	-•2844	•1778	16.25	05.33	003.8	C			D4A
	-•1967	•1768	11.82	05.41	003.1	B		*7	D4A
	-•2674	•1768	15.39	05.39	003.1	C		*8	D4A
	-•2163	•1767	12.81	05.41	004.2	B			D4A
	-•2203	•1761	13.01	05.44	006.3	B		*3	D4A
	-•2717	•1750	15.61	05.48	005.6	B			D4A
	-•2357	•1746	13.79	05.51	004.2	B			D4A
STADIUS C	-•2676	•1746	15.40	05.50	003.1	C			D4A
	-•2509	•1743	14.56	05.52	003.1	C			D4A
	-•2100	•1738	12.49	05.56	002.4	C			D4A
	-•2153	•1731	12.76	05.59	003.1	C		*3	D4A
	-•2284	•1729	13.42	05.60	004.9	B			D4A
	-•2218	•1711	13.09	05.69	003.1	C			D4A
	-•2537	•1709	14.70	05.69	002.8	C			D4A
	-•2717	•1708	15.61	05.69	004.5	C		*3	D4A
	-•1371	•1693	08.80	05.80	003.1	B			D4A
	-•2191	•1690	12.95	05.80	003.8	B			D4A
SCHROETER B	-•0692	•1688	05.35	05.83	004.2	A			D4A
	-•2693	•1686	15.49	05.80	005.2	C		*3	D4A
	-•2454	•1676	14.28	05.86	004.5	C			D4A

CRATER	XSI	ETA	XINS	YINS	DIA.M	Q	P	RMKS	REG
STADIUS K	-.2321	.1675	13.61	05.87	004.2	B			D4A
	-.2642	.1667	15.23	05.90	003.5	B			D4A
	-.2297	.1661	13.49	05.94	002.8	C			D4A
	-.2313	.1661	13.57	05.94	002.4	C			D4A
	-.2563	.1660	14.83	05.94	003.8	A			D4A
	-.3187	.1651	17.98	05.96	003.1	C			D4A
	-.2321	.1647	13.61	06.01	002.8	C			D4A
	-.0657	.1646	05.17	06.04	003.1	B			D4A
	-.2363	.1645	13.82	06.02	003.1	C			D4A
	-.2475	.1640	14.39	06.04	003.1	C			D4A
	-.1229	.1638	08.08	06.08	002.4	C			D4A
	-.2353	.1633	13.77	06.08	002.8	C			D4A
	-.2289	.1632	13.45	06.09	003.1	B			D4A
STADIUS N	-.2654	.1631	15.29	06.08	005.2	A			D4A
	-.1220	.1630	08.03	06.12	002.8	C			D4A
	-.2679	.1625	15.42	06.11	005.6	C			D4A
BODE K	-.0390	.1618	03.81	06.18	004.5	A			D4A
	-.1247	.1612	08.17	06.21	002.8	B			D4A
	-.1675	.1607	10.34	06.23	003.1	B			D4A
	-.2078	.1607	12.38	06.22	003.1	B			D4A
	-.2165	.1587	12.82	06.32	003.5	B			D4A
	-.2614	.1584	15.09	06.32	003.5	C			D4A
	-.1801	.1578	10.98	06.37	002.8	B			D4A
	-.2646	.1566	15.25	06.41	002.8	C			D4A
BODE A	-.0200	.1564	02.84	06.45	012.9	A			D4A
	-.2695	.1563	15.50	06.42	003.5	C			D4A
	-.2244	.1556	13.22	06.47	002.8	C			D4A
	-.1551	.1551	09.71	06.51	002.4	B			D4A
	-.2737	.1549	15.71	06.49	003.8	C			D4A
	-.2141	.1535	12.70	06.58	003.1	C			D4A
	-.2283	.1528	13.42	06.61	003.1	C			D4A
	-.2642	.1520	15.23	06.64	003.1	C			D4A
BODE B	-.0527	.1519	04.51	06.68	010.5	A			D4A
	-.2491	.1519	14.47	06.65	003.1	C			D4A
	-.2570	.1515	14.87	06.67	003.8	C			D4A
	-.0345	.1503	03.58	06.76	003.1	B			D4A
	-.2129	.1501	12.64	06.75	003.1	C			D4A
	-.1578	.1494	09.85	06.80	003.5	B		*2,3	D4A
SCHROETER J	-.1048	.1479	07.16	06.88	007.0	A		*3	D4A
	-.2016	.1478	12.07	06.87	002.8	B			D4A
	-.2121	.1470	12.60	06.91	002.4	C			D4A
	-.2885	.1463	16.46	06.92	003.1	C			D4A
	-.0160	.1459	02.64	06.98	002.8	B			D4A
	-.2133	.1456	12.66	06.98	002.8	B			D4A
	-.1860	.1455	11.28	06.99	002.8	C			D4A
	-.2032	.1448	12.15	07.02	002.8	C			D4A
	-.2301	.1441	13.51	07.05	002.8	C			D4A
SCHROETER C	-.1675	.1438	10.34	07.08	008.7	B		*6	D4A
	-.0971	.1435	06.77	07.10	004.2	B		*3	D4A
	-.2014	.1426	12.06	07.13	002.4	C			D4A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
	-•1831	•1425	11.13	07.14	002.8	C			D4A
	-•2305	•1425	13.53	07.13	002.4	C			D4A
	-•2339	•1423	13.70	07.14	002.8	C			D4A
	-•2180	•1420	12.90	07.16	003.1	C			D4A
	-•2667	•1417	15.36	07.16	003.5	B			D4A
	-•2155	•1414	12.77	07.19	002.8	C			D4A
	-•2858	•1399	16.32	07.24	004.9	B			D4A
	-•1993	•1397	11.95	07.28	006.3	C		*2	D4A
	-•2218	•1394	13.09	07.29	002.1	C		*8	D4A
	-•2721	•1386	15.63	07.31	003.1	B			D4A
	-•2028	•1385	12.13	07.34	002.8	C			D4A
	-•1019	•1376	07.01	07.40	002.8	C			D4A
	-•1706	•1376	10.50	07.39	002.4	C			D4A
	-•1949	•1373	11.73	07.40	002.8	B			D4A
	-•2618	•1367	15.11	07.41	002.8	C			D4A
	-•0123	•1355	02.45	07.50	002.8	C			D4A
	-•1943	•1353	11.70	07.50	003.8	B			D4A
	-•0031	•1339	01.98	07.58	003.1	B			D4A
	-•0822	•1326	06.01	07.65	003.8	B		*3	D4A
	-•2711	•1319	15.58	07.65	003.5	B			D4A
	-•1200	•1318	07.93	07.69	002.8	C			D4A
	-•0278	•1310	03.24	07.73	003.1	B			D4A
	-•2802	•1310	16.04	07.69	003.5	B			D4A
	-•3018	•1309	17.13	07.69	001.7	C			D4A
	-•1407	•1307	08.98	07.74	002.8	C			D4A
	-•1933	•1304	11.65	07.75	002.8	C			D4A
	-•2372	•1299	13.87	07.76	004.2	B		*2	D4A
	-•2604	•1292	15.04	07.79	004.5	C		*3	D4A
	-•2874	•1284	16.40	07.82	003.5	B			D4A
	-•2844	•1280	16.25	07.84	003.5	B			D4A
	-•0249	•1278	03.09	07.89	002.8	B			D4A
	-•1997	•1273	11.97	07.90	002.8	B			D4A
	-•2618	•1272	15.11	07.89	003.5	C			D4A
	-•2858	•1264	16.32	07.92	003.5	B			D4A
	-•0851	•1260	06.16	07.98	002.8	C			D4A
	-•0188	•1258	02.78	07.99	002.4	C			D4A
	-•1470	•1257	09.30	07.99	002.8	C			D4A
	-•2741	•1253	15.73	07.98	002.8	C			D4A
	-•1176	•1248	07.81	08.04	004.5	A			D4A
	-•2198	•1245	12.99	08.04	003.8	B		*3	D4A
	-•2820	•1241	16.13	08.04	003.1	C			D4A
	-•3018	•1241	17.13	08.03	003.8	C			D4A
	-•2947	•1240	16.77	08.04	004.2	B		*7	D4A
COPERNICUS C	-•2634	•1238	15.19	08.06	006.3	A			D4A
	-•2735	•1237	15.70	08.06	004.2	A			D4A
	-•1580	•1229	09.86	08.13	003.1	B			D4A
	-•1375	•1222	08.82	08.17	004.9	B			D4A
	-•1645	•1221	10.19	08.17	002.8	C			D4A
	-•2840	•1217	16.23	08.16	003.1	C		*2	D4A
	-•2003	•1206	12.00	08.24	005.9	A			D4A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
COPERNICUS H	-•3108	.1199	17.58	08.24	005.6	A			D4A
	-•1141	.1198	07.63	08.29	004.9	B		*3	D4A
	-•2981	.1190	16.94	08.29	003.5	B			D4A
	-•0586	.1181	04.81	08.38	004.2	B			D4A
	-•1677	.1181	10.35	08.37	002.8	B			D4A
BODE	-•0417	.1173	03.95	08.42	018.5	A	C		D4A
	-•1084	.1167	07.34	08.45	002.8	C			D4A
	-•2303	.1166	13.52	08.43	006.3	B		*2	D4A *
	-•2541	.1165	14.72	08.43	005.9	B		*7	D4A
	-•2021	.1156	12.09	08.49	002.4	C			D4A
	-•1965	.1148	11.81	08.53	003.1	C		*3	D4A .
	-•2246	.1145	13.23	08.54	002.4	B			D4A
	-•2563	.1137	14.83	08.57	003.5	B			D4A
	-•1598	.1136	09.95	08.60	003.1	C		*3	D4A *
	-•1953	.1136	11.75	08.59	003.5	C		*3	D4A
	-•0296	.1125	03.33	08.66	003.1	B			D4A
BODE G	-•0612	.1105	04.94	08.76	004.5	B			D4A
FAUTH	-•3416	.1088	19.13	08.78	012.9	A			D4A
	-•2428	.1076	14.15	08.88	002.4	C			D4A
	-•3090	.1071	17.49	08.88	004.5	B			D4A
FAUTH D	-•3142	.1047	17.75	09.00	005.6	B			D4A
PALLAS A	-•0402	.1041	03.87	09.08	010.8	A			D4A
FAUTH A	-•3426	.1041	19.18	09.02	009.4	A			D4A
	-•0765	.1039	05.72	09.09	002.4	C			D4A
	-•3317	.1030	18.63	09.08	005.2	B			D4A
	-•0067	.1015	02.16	09.21	002.8	A			D4A
FAUTH B	-•3285	.1010	18.47	09.18	004.5	B		*2	D4A
	-•1090	.0995	07.37	09.31	003.1	B			D4A
	-•2898	.0983	16.52	09.33	003.1	B			D4A
	-•1504	.0981	09.47	09.38	002.8	B			D4A
BODE L	-•0655	.0980	05.16	09.39	004.9	A			D4A
	-•1934	.0977	11.65	09.39	004.5	B		*2	D4A
	-•2985	.0965	16.96	09.42	005.2	B		*7	D4A
PALLAS	-•0284	.0961	03.27	09.48	049.0	A	B6	*5	D4A
	-•3051	.0948	17.29	09.50	003.1	B			D4A
	-•2944	.0947	16.75	09.51	002.4	C			D4A
	-•3383	.0947	18.96	09.49	003.1	C			D4A
	-•2979	.0943	16.93	09.53	003.1	B			D4A
	-•3557	.0940	19.84	09.52	005.6	B		*3	D4A
	-•2074	.0939	12.36	09.58	004.5	C		*2,8	D4A
FAUTH E	-•3516	.0938	19.63	09.53	004.2	B			D4A
GAMBART M	-•2015	.0935	12.06	09.60	004.5	A			D4A
	-•1202	.0933	07.94	09.62	002.4	B			D4A
	-•2932	.0929	16.69	09.60	003.8	B			D4A
	-•2831	.0928	16.18	09.61	003.1	B			D4A
	-•3550	.0920	19.80	09.62	003.1	C			D4A
	-•2276	.0918	13.38	09.68	003.1	B			D4A
	-•1887	.0916	11.41	09.70	002.4	C			D4A
	-•2785	.0915	15.95	09.68	003.8	B			D4A
	-•2098	.0913	12.48	09.71	003.1	A			D4A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
FAUTH C	-• 3210	.0911	18.09	09.68	004.5	B			D4A
	-• 2423	.0909	14.12	09.72	003.5	C			D4A
	-• 2385	.0901	13.93	09.76	002.8	B			D4A
	-• 0559	.0898	04.67	09.80	003.1	A			D4A
	-• 2065	.0893	12.31	09.81	004.2	B		*3,8	D4A
	-• 1573	.0887	09.82	09.85	003.1	C			D4A
	-• 3220	.0887	18.14	09.80	003.8	B		*7	D4A
	-• 3395	.0884	19.02	09.81	002.8	C			D4A
MURCHISON	-• 0030	.0883	01.97	09.87	059.5	C	C	*3	D4A
	-• 3069	.0882	17.38	09.83	003.5	C			D4A
	-• 3186	.0879	17.97	09.84	003.5	C			D4A
	-• 2002	.0875	11.99	09.90	004.2	B		*2	D4A
	-• 0978	.0874	06.80	09.92	003.1	B			D4A
	-• 2282	.0862	13.41	09.96	004.2	C		*8,7	D4A
	-• 2110	.0859	12.54	09.98	002.8	B			D4A
	-• 2259	.0856	13.29	09.99	003.1	A			D4A
	-• 3172	.0848	17.90	10.00	004.2	B		*2	D4A
	-• 3373	.0844	18.91	10.01	003.5	A			D4A
	-• 3317	.0842	18.63	10.02	002.8	C			D4A
	-• 1335	.0841	08.61	10.08	009.8	A			D4A
	-• 1351	.0839	08.69	10.09	004.9	A			D4A
	-• 2261	.0838	13.30	10.08	003.1	A			D4A
SCHROETER A	-• 2778	.0835	15.91	10.08	004.5	A			D4A
	-• 3526	.0827	19.68	10.09	002.4	C			D4A
	-• 3262	.0817	18.35	10.15	003.5	B			D4A
	-• 2895	.0814	16.50	10.18	003.8	B		*3	D4A
	-• 2018	.0811	12.07	10.22	004.2	C		* 8,7	D4A
	-• 0271	.0807	03.20	10.25	005.2	B			D4A
	-• 3355	.0800	18.82	10.23	002.8	B			D4A
	-• 2067	.0799	12.32	10.28	002.8	C			D4A
	-• 3556	.0794	19.83	10.25	003.8	A			D4A
	-• 2936	.0792	16.71	10.29	004.2	C		*8	D4A
	-• 3264	.0791	18.36	10.28	003.8	C			D4A
	-• 2043	.0789	12.20	10.33	002.1	C		*3	D4A
	-• 2695	.0788	15.49	10.32	003.1	C		*3	D4A
	-• 1053	.0784	07.18	10.37	002.1	B			D4A
PALLAS C	-• 0189	.0781	02.78	10.38	005.9	B			D4A
	-• 1645	.0781	10.18	10.38	005.9	A			D4A
SCHROETER D	-• 1957	.0776	11.76	10.40	004.2	C		*8,7	D4A
	-• 0505	.0772	04.39	10.43	003.5	B			D4A
	-• 1477	.0767	09.33	10.45	003.5	C		*3	D4A
	-• 2026	.0767	12.11	10.44	003.1	B			D4A
	-• 2049	.0767	12.23	10.44	002.1	C			D4A
	-• 3332	.0767	18.70	10.40	003.1	C			D4A
	-• 2713	.0760	15.58	10.46	002.4	C			D4A
	-• 1511	.0759	09.50	10.49	003.5	B			D4A
	-• 0997	.0746	06.89	10.56	002.1	B			D4A
	-• 3562	.0746	19.86	10.49	004.5	A			D4A
PALLAS B	-• 2050	.0743	12.23	10.56	002.8	C			D4A
	-• 0454	.0732	04.13	10.63	004.2	A			D4A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
	- .1316	.0722	08.51	10.68	003.1	B			D4A
	- .2085	.0719	12.41	10.68	002.8	B			D4A
	- .3036	.0715	17.21	10.67	003.5	B			D4A
	- .1154	.0712	07.69	10.73	004.2	A			D4A
	- .2125	.0707	12.61	10.74	003.1	C			D4A
	- .2099	.0705	12.48	10.75	003.8	B		*2	D4A
	- .1235	.0698	08.10	10.80	003.5	C		*2	D4A
	- .2953	.0682	16.79	10.84	003.8	B		*7	D4A
	- .1941	.0680	11.68	10.88	002.8	B			D4A
	- .2265	.0680	13.32	10.87	003.5	B			D4A
GAMBART K	- .2444	.0679	14.22	10.87	004.5	B			D4A
	- .2709	.0678	15.56	10.87	004.2	B		*3	D4A
	- .1235	.0676	08.10	10.91	002.4	C		*2	D4A
	- .2275	.0676	13.37	10.89	003.1	C		*3	D4A
	- .2396	.0676	13.98	10.89	002.8	B			D4A
	- .2554	.0675	14.78	10.89	002.1	B			D4A
	- .1633	.0663	10.12	10.97	003.1	B			D4A
	- .2084	.0663	12.40	10.96	004.9	C		*8,7	D4A
	- .3521	.0657	19.65	10.94	003.1	C			D4A
	- .2175	.0649	12.86	11.03	004.2	A			D4A
	- .2895	.0646	16.50	11.02	003.8	C			D4A
	- .1355	.0636	08.71	11.11	003.5	A			D4A
	- .2198	.0631	12.98	11.12	003.1	C		*7	D4A
	- .0260	.0630	03.14	11.14	003.1	C			D4A
	- .0213	.0627	02.90	11.15	003.8	B			D4A
	- .1281	.0624	08.33	11.17	003.8	A			D4A
	- .3479	.0620	19.44	11.13	004.2	B		*3	D4A
	- .3207	.0610	18.07	11.19	003.1	B			D4A
	- .2218	.0607	13.08	11.24	003.8	A			D4A
	- .1196	.0604	07.90	11.27	002.8	C		*3,7	D4A
	- .2191	.0597	12.94	11.29	004.5	C		*8,7	D4A
	- .0834	.0592	06.06	11.33	002.4	C			D4A
GAMBART D	- .3031	.0586	17.18	11.32	006.3	B			D4A
	- .0331	.0580	03.50	11.39	002.4	C			D4A
GAMBART C	- .2039	.0578	12.17	11.39	012.6	A			D4A
GAMBART L	- .2624	.0568	15.13	11.42	004.2	A			D4A
GAMBART H	- .1833	.0560	11.13	11.48	004.5	A			D4A
SCHROETER H	- .0889	.0552	06.34	11.53	002.1	B			D4A
SCHROETER G	- .1494	.0549	09.41	11.54	004.9	A			D4A
SCHROETER K	- .1630	.0549	10.10	11.54	006.3	A			D4A
	- .1372	.0540	08.79	11.59	006.3	A			D4A
	- .2197	.0533	12.97	11.61	004.2	C		*3	D4A
	- .1790	.0515	10.91	11.71	003.8	A			D4A
	- .1429	.0494	09.08	11.82	002.8	A			D4A
	- .0615	.0486	04.94	11.86	003.1	B			D4A
	- .3333	.0469	18.70	11.89	003.1	A			D4A
	- .1879	.0462	11.36	11.97	001.7	C			D4A
	- .1250	.0460	08.17	11.99	002.1	C			D4A
	- .3415	.0459	19.11	11.94	002.8	B			D4A
	- .1577	.0457	09.83	12.00	003.1	C			D4A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
SCHROETER	- .1201	.0452	07.92	12.03	035.0	C	B4	*3,4	D4A
	- .0464	.0448	04.17	12.05	002.8	B			D4A
	- .1992	.0442	11.93	12.07	001.0	C			D4A
	- .0191	.0439	02.78	12.09	004.5	B			D4A
	- .1676	.0439	10.33	12.09	001.4	C			D4A
	- .3457	.0438	19.32	12.04	003.8	B		*3	D4A
	- .1968	.0426	11.81	12.15	003.8	A			D4A
	- .1294	.0416	08.39	12.21	003.5	C			D4A
PALLAS D	- .0454	.0414	04.12	12.22	004.2	B			D4A
SCHROETER E	- .1182	.0412	07.82	12.23	003.5	C			D4A
	- .1048	.0404	07.14	12.27	004.9	C			D4A
	- .0556	.0402	04.64	12.28	001.7	C			D4A
	- .3044	.0398	17.24	12.26	003.1	C		*7	D4A
	- .1158	.0396	07.70	12.31	002.4	C			D4A
	- .3413	.0393	19.10	12.27	003.1	B			D4A
	- .2637	.0389	15.19	12.32	002.8	B			D4A
	- .3360	.0389	18.83	12.29	002.8	C			D4A
	- .0168	.0381	02.66	12.38	002.1	B			D4A
GAMBART B	- .1998	.0374	11.96	12.41	011.9	A			D4A
	- .3215	.0374	18.10	12.37	003.1	B		*2	D4A
	- .1787	.0371	10.89	12.43	006.3	A			D4A
	- .1056	.0364	07.18	12.47	003.1	C			D4A
	- .1718	.0363	10.54	12.47	001.4	C			D4A
	- .0529	.0340	04.50	12.59	003.1	B		*3	D4A
GAMBART G	- .2078	.0338	12.36	12.59	006.3	A			D4A
	- .1866	.0334	11.29	12.61	004.2	B		*7	D4A
	- .2822	.0331	16.12	12.60	002.4	B			D4A
	- .0928	.0322	06.53	12.68	002.4	C			D4A
	- .2757	.0314	15.79	12.69	004.2	A			D4A
	- .2836	.0309	16.19	12.71	004.9	C		* 3,8	D4A
SCHROETER L	- .1287	.0308	08.35	12.75	003.5	B			D4A
	- .1058	.0306	07.19	12.76	003.1	B			D4A
	- .1914	.0302	11.53	12.77	002.1	C			D4A
	- .2818	.0301	16.10	12.75	002.8	B			D4A
	- .3279	.0298	18.42	12.75	003.5	A			D4A
	- .0982	.0292	06.80	12.83	004.2	B		*3	D4A
	- .0274	.0291	03.20	12.83	003.8	A			D4A
	- .1218	.0290	08.00	12.84	002.4	C		*2	D4A
	- .0657	.0284	05.15	12.87	002.8	B			D4A
	- .0652	.0254	05.12	13.02	002.8	A			D4A
	- .1599	.0251	09.93	13.03	002.4	B			D4A
	- .2827	.0249	16.14	13.01	003.8	C		*3	D4A
	- .1313	.0248	08.48	13.05	002.4	B			D4A
	- .0379	.0239	03.73	13.09	001.7	C			D4A
	- .2855	.0239	16.28	13.06	002.8	C			D4A
	- .2280	.0229	13.38	13.13	002.1	C			D4A
	- .2843	.0225	16.22	13.13	003.5	B		*3	D4A
	- .2974	.0202	16.88	13.24	003.1	C			D4A
	- .3111	.0193	17.57	13.28	002.4	B			D4A
	- .1919	.0192	11.55	13.32	003.1	B			D4A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
GAMBART E	- .0195	.0185	02.79	13.36	001.4	C			D4A
GAMBART A	- .2956	.0180	16.79	13.35	004.2	A			D4A
GAMBART	- .3207	.0168	18.05	13.40	012.6	A			D4A
	- .2623	.0161	15.11	13.46	025.5	A	B6		D4A
	- .3463	.0160	19.34	13.43	003.1	B			D4A
	- .1554	.0141	09.70	13.58	002.8	C			D4A
	- .0531	.0139	04.50	13.59	002.1	B			D4A
	- .0879	.0136	06.27	13.61	002.4	C			D4A
	- .1829	.0134	11.09	13.61	003.1	B			D4A
	- .0600	.0114	04.85	13.72	002.8	B			D4A
	- .2844	.0105	16.22	13.73	002.8	C		*3	D4A
	- .0052	.0104	02.06	13.76	002.4	C			D4A
	- .1918	.0102	11.54	13.77	001.7	C			D4A
	- .1486	.0097	09.35	13.80	002.8	B			D4A
	- .3197	.0094	18.00	13.77	002.8	C			D4A
	- .2920	.0070	16.60	13.90	002.8	B			D4A
	- .2503	.0069	14.50	13.92	003.1	B			D4A
	- .3098	.0047	17.50	14.01	002.8	B			D4A
	- .2718	.0036	15.58	14.08	003.1	A			D4A
SOEMMERING	- .1299	.0029	08.40	14.14	026.9	B	B4		D4A
	- .2910	.0012	16.55	14.19	005.2	A			D4A
	- .2285	- .0011	13.39	14.33	003.1	A			D4A
	- .2659	- .0039	15.28	14.46	002.8	B		*3	D4A
	- .0890	- .0064	06.32	14.61	007.7	A			D4A
	- .2719	- .0065	15.58	14.59	002.8	B			D4A
	- .2986	- .0065	16.93	14.58	002.4	B			D4A
	- .0058	- .0085	02.08	14.71	003.5	A			D4A
	- .3217	- .0091	18.09	14.70	003.5	A			D4A
GAMBART N	- .2572	- .0097	14.84	14.75	004.9	A			D4A
	- .2214	- .0105	13.03	14.80	002.8	A			D4A
	- .2695	- .0111	15.46	14.82	002.8	B			D4A
GAMBART F	- .2920	- .0117	16.59	14.84	003.5	B			D4A
	- .0594	- .0120	04.81	14.89	003.8	A			D4A
	- .1019	- .0120	06.97	14.89	026.6	A	B6	*3	D4A
	- .3541	- .0124	19.72	14.85	003.1	B			D4A
	- .3118	- .0126	17.59	14.88	007.3	B			D4A
	- .1279	- .0136	08.29	14.97	003.1	B			D4A
	- .2845	- .0146	16.21	14.99	003.5	B			D4A
	- .2827	- .0150	16.12	15.01	003.1	B			D4A
	- .3123	- .0167	17.61	15.08	004.2	B		*2	D4A
	- .1838	- .0170	11.12	15.13	004.9	A			D4A
	- .2152	- .0177	12.71	15.16	003.5	A			D4A
	- .2540	- .0193	14.67	15.23	005.2	C		*1	D4A
	- .3119	- .0207	17.59	15.28	002.8	C		*2	D4A
	- .1972	- .0212	11.80	15.34	003.1	A			D4A
	- .2887	- .0233	16.42	15.42	004.2	A			D4A
	- .2341	- .0242	13.66	15.48	011.2	C			D4A
	- .0058	- .0246	02.07	15.51	002.8	A			D4A
	- .2285	- .0248	13.38	15.51	011.9	A			D4A
	- .2430	- .0287	14.11	15.70	007.7	A			D4A

Special Remarks marked thus \* in Main Catalog

1. Low walls.
2. Elliptical, with major axis radial to Mare Imbrium.
3. Elliptical.
4. 20% of wall missing.
5. Central peak.
6. 25% of wall missing.
7. Elliptical, with major axis radial to Copernicus.
8. Very elliptical - major axis exceeds minor axis by 3 to 6 times.